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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,618	04/16/2004	Jian Cao	P-21057.00	1313
27581	7590	01/08/2008		
MEDTRONIC, INC. 710 MEDTRONIC PARKWAY NE MINNEAPOLIS, MN 55432-9924				
			EXAMINER KAHELIN, MICHAEL WILLIAM	
			ART UNIT 3762	PAPER NUMBER
			MAIL DATE 01/08/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/826,618

Applicant(s)

CAO ET AL.

Examiner

Michael Kahelin

Art Unit

3762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (US 2002/0183637, hereinafter "Kim").
3. In regards to claims 1 and 10, Kim discloses a device/method for generating a template of a normal heartbeat comprising detecting a plurality of heartbeats (par. 0007-0010), collecting a first predetermined number of detected non-paced heartbeats having predetermined characteristics (par. 0078-0081), generating a current template from the first selected events, collecting a second predetermined number of detected non-paced heartbeats, determining whether the template is valid based on a comparison with the first selected events, and generating an updated template if the current template is not valid (par. 0010). Please note that, although an embodiment utilizes paced and non-paced beats to determine "regularity", these paced beats are not used for template generation, per the rules of paragraph 0078 and 0081. Further, Kim discloses an embodiment without therapy provision per paragraphs 0065 ("monitor mode") and 0041 ("only monitoring of cardiac activity is performed"). As such, all beats are inherently non-paced because no pacing therapy is provided.

4. In regards to claims 2 and 11, the template update is repeated (par. 0064).
5. In regards to claims 3 and 12, identifying events as first selected events comprises determining whether consecutive events have a first characteristic (i.e. comprise the first 20 beats) and identifying a predetermined number of subsequent events as second selected events (i.e. comprise the beats subsequent to the 20 beats).
6. In regards to claims 4 and 13, the “monitoring only” embodiment requires that consecutive events have an RR-interval greater than a threshold per paragraph 0071. Further, the “NSR” beats of paragraphs 0078-0081 are consecutive to each other (although they may or may not be consecutive with respect to all heart beats) and have RR-intervals greater than a threshold because they must pass the “regularity” test of 0071.
7. In regards to claims 7, 8, 16 and 17, a cross-match is determined and compared to a threshold and a delay is generated if the threshold comparison fails (par. 0108).
8. In regards to claims 9 and 18, R-R intervals associated with the first events are compared to an average (par. 0071); a cross-match is computed (par. 0105) if the R-R intervals are greater (or less) than the average; and a template is generated from the events corresponding to the cross-matches (par. 0108).
9. In regards to claims 5, 6, 14, 15, and 19, Kim discloses that valid sense events having first and second characteristics comprise the following characteristics: the sense event is not a ventricular pace event (par. 0078), the event has an R-R interval greater than a predetermined rate of about 600 ms (par. 0071), the sense event can comprise events other than those directly following a ventricular pace (par. 0078), and the

ventricular sense event follows an atrial pace event by a predetermined threshold (par. 0081, rule 5) and is about 100 ms (see Fig. 9,  $\frac{1}{2}$  of the 320 ms window is the threshold).

### ***Response to Arguments***

10. Applicant's arguments filed 10/18/2007 have been fully considered but they are not persuasive. Applicant argued that Kim does not disclose that the "current rhythm" of Figure 4 is not used to both validate the candidate template and update the template. Although Kim does appear to be silent on the matter, the claim language only requires that the determination of whether the current template is valid be "based upon" a comparison of the first and second events and that, in response, a template is generated "from the collected second events." In other words, the claim language does not require that all of the second events and only the second events are used to both validate and update the template. As such, the following scenario, disclosed by Kim, anticipates the claim language: a template is created from first events per Figure 4 or 6; a predetermined delay is enforced after exiting the flowchart of Figure 4 per paragraph 0064; and the template is updated per Figure 6 wherein all beats acquired in Figure 6 are the "second selected events." As such, the determination is validated "based on" the "second selected events" and the template is updated "from the" second collected events, even though these two specific groups of events (for determination and updating) may or may not be the same.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kahelin whose telephone number is (571) 272-8688. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MWK

*MR*  
*12/27/07*

GEORGE R. EVANISKO  
PRIMARY EXAMINER

*12/28/07*